



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inter Patent Application of

Euee-seon Jang et al.

Application No.: 09/396,470

Filed: September 15, 1999

For: METHOD OF PROGRESSIVELY
CODING/DECODING 3-D MESH
INFORMATION AND
APPARATUS THEREOF

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) Group Art Unit: 2613

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) Examiner: B. Senfi

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) Appeal No.: 7479
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REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the Examiner's Answer dated September 12, 2005, Appellants offer the following comments. These comments highlight arguments with respect to some newly refined points made in the Examiner's Answer. Appellants maintain the arguments presented in the Brief for Appellant filed January 3, 2006.

- A. The Bajaj et al. patent and priority document do not disclose photometry information as recited in claim 1.

The Examiner is relying upon a broad disclosure in the Bajaj et al. patent of the compressed datastream to include photometry information. The broad disclosure does not teach the recitations of the pending claims. Further, the Bajaj et al. priority document, which was not incorporated by reference into the Bajaj et al. patent and

therefore does not constitute prior art, discloses in Tables 6-8 the intended datastream format, which evidences that Bajaj et al. was even further from the present invention than the broad disclosure in the patent might otherwise indicate when read with Appellants' disclosure in mind.

More specifically, as for the alleged disclosure of "other attribute data" on page 94 of the Bajaj et al. priority document and Column 14, lines 62-65 of the Bajaj et al. patent, these both refer to the MPEG-4 scene description language binary format for scenes (BIFS) template, which is apparently to be used in combination with the encoding scheme disclosed in the other portions of the Bajaj et al. patent. Further reading after the citation reveals that the bitstream described in Figure 33 is used (column 15, lines 8-11) in transmitting compressed data, which is not the same bitstream as that disclosed in the Bajaj et al. priority document. The asserted interpretation of the Bajaj et al. patent is not supported by the priority document and should not be afforded the earlier effective "prior art" date for this feature. Further, even if one were to look at the priority document disclosure, the present claims would not be suggested.

As for the definition of the term "Photometry", Appellants have provided a dictionary definition of "photometry". Appellants assert that one of ordinary skill in the art of video compression would not have defined photometry as "color and more" as asserted by the Examiner.

B. The Bajaj et al. patent does not disclose "unit mesh parts decoding and reproduction"

The Examiner asserts on page 11 of the Examiner's Answer that Figures 19-21 of the Bajaj et al. patent are similar to Appellants' Figure 2 and thereby disclose the "unit mesh parts" recited in the claims. Figures 19-21 of Bajaj disclose a bit march string in a simplified triangle, a triangle strip after the first and second steps of intra-layer decomposition, respectively. Appellants' Figure 2 illustrates an exemplary structure of the progressive 3-D mesh information. In Figure 2, a 3-D mesh object comprises a mesh object layer, which further includes one or more mesh components. Each mesh component includes connectivity information, geometry information and photometry information. Figures 19-21 of the Bajaj et al. patent do not illustrate the exemplary structure shown in Appellants' Figure 2. It is respectfully submitted that these distinctions are sufficiently reflected in the appealed claims.

The Examiner's citation to column 1, lines 45-48 of Bajaj et al. patent describes a feature that is desired in a communication system, and is not relevant to the claims. The citation to column 4, lines 38-55 describes progressive geometry encoding, while the citation to column 6, lines 22-29 refers to transmission of the compressed signal. None of the citations correspond to Figures 19-21 of the Bajaj et al. patent and do not describe "unit mesh parts" as recited in the claims.

C. New grounds of rejection under Official Notice

Claims 4, 7, 14, and 16 have now been rejected under Official Notice for allegedly reciting features that are of common knowledge and notoriously well known.



However, each of the above claims recites features when viewed in combination with the base claims recite features that are not common knowledge or notoriously well known. The Examiner could be requested to provide evidence that each of the features in claims 4, 7, 14 and 16 in combination with independent claims is well known. Given the status of the appeal, the taking of Official Notice is improper, and the assertion of Official Notice unsubstantiated. It is properly disregarded.

D. The Bajaj et al. patent does not disclose the structures as recited in the claim.

Independent claims 12, 15 and 19 recite structural elements such as a 3-D data analyzer, component coders, 3-D mesh object layer analyzer, and mesh component decoders which the Examiner states are disclosed in the Bajaj et al. patent because the same functionality is allegedly disclosed. For instance, on page 7 of the Examiner's Answer, the Examiner asserts that the 3-D data analyzer is disclosed at column 4, lines 8-11 of the Bajaj et al. patent. However, the cited three lines of the Bajaj et al. patent do not disclose or suggest any of the above claimed components.

It is not proper to assert similarities in functionality (which are not present) and then imply the claimed structural elements are therefore met, without complying with the standards for rejections under the inherency doctrine. These have not been established. The Examiner has not identified the structures of the Bajaj et al. patent which disclose or suggest the structural components recited in the independent claims.

E. The rejections under 35 U.S.C. §103(a) are improper because the applied prior art does not provide some suggestion or motivation to modify the references.

On page 6 of the Examiner's Answer, the Examiner admits that the Bajaj et al. reference does not disclose reconstructing the 3-D mesh by synthesizing the plurality of decoded mesh components. The Examiner asserts that because decoding is sometimes a reverse process of encoding, the Bajaj et al. system must synthesize the image for display on the display monitor. However, the Examiner is relying upon Appellants' claim language to provide the motivation to modify the Bajaj et al. reference, which is evidence of the use of improper hindsight.

On page 7 of the Examiner's Answer, the Examiner states that the Bajaj et al. reference is silent with respect to the feature in claim 12 of "...the plurality of coded mesh components are capable of being decoded and incrementally reproduced as unit mesh parts of the 3-D mesh." The Examiner alleges that because Bajaj teaches incrementally transmitting the encoded bit-stream, that it naturally follows that the decoder would incrementally reproduce the transmitted bit-stream data. However, there is no disclosure in the Bajaj patent to support the Examiner's position.

The Examiner cites on pages 4, 6 and 7 of the Examiner's Answer "column 10, layer decomposition" or "column 10, lines 33-40" of the Bajaj et al. patent to allegedly teach various features recited in Appellants' claims. For instance, on page 4 the citation of "column 10, layer decomposition" allegedly discloses "dividing a 3-D mesh into a plurality of mesh components, wherein each of the mesh components corresponds to a different partition of the 3-D mesh" as recited in Appellants' claim 1. However, on pages

5-6, column 10 of the Examiner's Answer, "layer decomposition" allegedly discloses the features recited in claim 5 of "dividing a transmitting bit stream into a plurality of coded mesh components wherein the plurality of mesh components are capable of being incrementally reproduced as unit mesh parts of a 3-D mesh". Based upon this rationale, the cited column discloses both a progressive 3-D mesh information coding method as well as a progressive 3-D mesh information decoding method without any text to support such an assertion. In addition, the Examiner's Answer asserts that column 10, lines 33-40 also disclose the step of "extracting one or more mesh object layers from a 3-D mesh and dividing each of the mesh object layers into a plurality of independent mesh components" as recited in claim 10. The Examiner cites column 4, lines 5-11 and column 6, lines 22-23 and Figures 3A-3C and Figures 19-21 in support of the citation to column 10, layer decomposition teaching. However, none of the supporting citations disclose the claimed features of "dividing a transmitting bit stream into a plurality of coded mesh components", "extracting one or more mesh object layers from a 3-D mesh and dividing each of the mesh object layers into a plurality of independent mesh components" and a "3-D data analyzer" as recited in the claims. It is respectfully submitted that the broad disclosure cited in the Bajaj et al. patent does not provide the level of detail as recited in Appellants' claims.

As for the motivational statement at the end of each of the 35 U.S.C. §103 rejections, the Examiner does not state why it would be obvious to modify the Bajaj patent to disclose the features recited in Appellants' claims, without the improper use of hindsight.

Conclusion

Appellants respectfully submit that the various elements of the claims are not taught or suggested by the Bajaj et al. patent and that the alleged motivation for the combinations of references is flawed. Appellants also note that the Bajaj et al. priority document does not provide support for cited portions of the Examiner's interpretation of the Bajaj et al. patent. For at least the reasons given above and in the Appeal Brief of October 3, 2005, Appellants respectfully request that the Board overturn the Examiner's rejections.

Respectfully submitted,

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Date: March 13, 2006

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